Applicant: Pearson et al. Atty. Dkt. No.: 2221.008B Serial No.: 10/587,054

Page 3 of 24

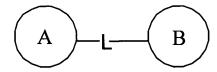
Amendments to the claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

CLAIMS

1. (original) An agent for treating a pulmonary disorder represented by the structure:



wherein

A is a mast-cell stabilizer;

i

L is a covalent linkage;

B is an iNOS inhibitor.

2. (original) An agent according to claim 1 wherein L is chosen from -CONH-, -COO-, -O(C=O)O-, -O(C=O)NH-, -NHCONH- and -(C=O)OCH(R)O(C=O)- and the compound is represented by a structure chosen from:

Applicant:

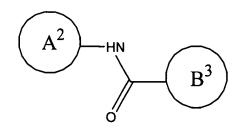
Pearson et al.

Serial No.:

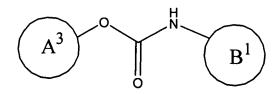
10/587,054

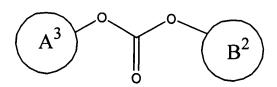
Page 4 of 24

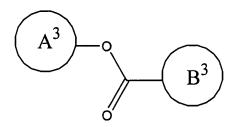
 A^2 B^2



Atty. Dkt. No.: 2221.008B







and

wherein

A1 is a mast-cell stabilizer having a carboxylic acid substituent;

A² is a mast-cell stabilizer having an amine substituent;

A³ is a mast-cell stabilizer having an alcohol substituent;

B¹ is an iNOS inhibitor having an amine substituent;

B² is an iNOS inhibitor having an alcohol substituent;

B³ is an iNOS inhibitor having a carboxylic acid substituent; and

R is hydrogen or methyl.

3. (original) A compound of formula I or II

Applicant: Pearson et al. Atty. Dkt. No.: 2221.008B Serial No.: 10/587,054

Serial No.: Page 5 of 24

I

wherein

- R^1 and R^2 are chosen from hydroxy, C_1 , C_2 , C_3 , C_4 , C_5 , and C_6 straight and branched alkoxy, -G-O(C=O) R^4 , R^5 , -NH R^6 , -OR 7 and -O $^-$ X $^+$, wherein X $^+$ is a pharmaceutically acceptable cation;
- R^3 is chosen from hydrogen, -(C=O) R^4 , -(C=O)-G-O(C=O) R^4 , -(C=O) R^5 , -(C=O)NH R^6 and -(C=O)O R^7 ;
- -O(C=O)R⁴ is the deshydrogen residue of a carboxylic acid, the parent of which, R⁴COOH, is an inhibitor of inducible nitric oxide synthase (iNOS);
- -(C=O)R⁴ is the deshydroxy residue of a carboxylic acid, the parent of which, R⁴COOH, is an inhibitor of iNOS;
- R^5 is -O- R^{20} -U, wherein U is chosen from hydrogen, (1,2-dithiolan-3-yl) and phenyl, and R^{20} is a divalent C_1 to C_{20} alkane or oxaalkane residue;
- -NHR⁶ is the deshydrogen residue of an amine, the parent of which, R⁶NH₂, is an inhibitor of iNOS;

Applicant:

Pearson et al.

Serial No.:

10/587,054

Page 6 of 24

-OR⁷ is the deshydrogen residue of an alcohol, the parent of which, R⁷OH, is an inhibitor of iNOS;

Atty. Dkt. No.: 2221.008B

G is a linking moiety cleavable under physiologic conditions; and at least one of R^1 , R^2 and R^3 must be -G-O(C=O) R^4 , -NHR⁶, -OR⁷, -(C=O) R^4 , -(C=O)-G-O(C=O) R^4 , -(C=O) R^5 , -(C=O)NHR⁶ or -(C=O)OR⁷.

4. (original) A compound according to claim 3 wherein R⁴COOH and R⁶NH₂ are chosen from:

Applicant:

Pearson et al.

Serial No.:

10/587,054

Page 7 of 24

and

$$H_3C$$
 H_3C
 H_3C

Atty. Dkt. No.: 2221.008B

5. (original) A compound according to claim 3 wherein R⁴COOH and R⁶NH₂ are chosen from compounds of structure:

$$H_3C$$
 H
 S
 CO_2H
 NH_2

wherein R^{50} is chosen from C_1 to C_4 alkyl, C_3 to C_4 cycloalkyl, C_1 to C_4 hydroxyalkyl and C_1 to C_4 haloalkyl.

6. (original) A compound according to claim 3 wherein R⁴COOH and R⁶NH₂ are chosen from compounds of structure:

Applicant: Pearson et al. Serial No.:

10/587,054

Page 8 of 24

$$H_3C$$
 H_3C
 NH_2
 NH_2

wherein Q is chosen from -CH₂CH=CHCH₂-, -(CH₂)_pX(CH₂)_q-, -O-, -NR⁵¹- and - $(CH_2)_rA(CH_2)_s$ -;

Atty. Dkt. No.: 2221.008B

p is 2 or 3;

q is 1 or 2;

X is $S(O)_x$;

x is 0, 1 or 2;

R⁵¹ is H or C₁₋₆ alkyl;

r is 1 or 2;

s is 1 or 2; and

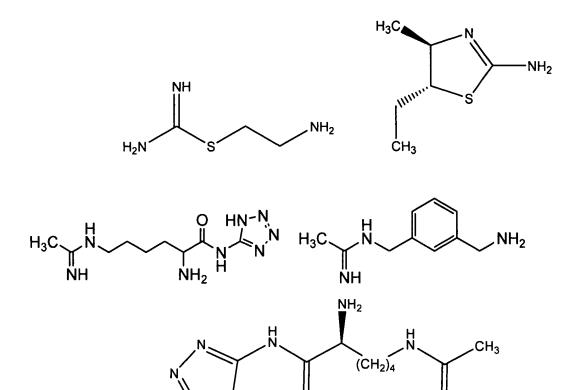
A is cyclobutyl, phenyl or pyridyl.

(original) A compound according to claim 3 wherein R⁶NH₂ is chosen from compounds 7. of structure:

Applicant: Pearson et al. Serial No.:

Page 9 of 24

10/587,054



Atty. Dkt. No.: 2221.008B

8. (original) A compound according to claim 3 wherein

 R^1 and R^2 are chosen from hydroxy, C_1 , C_2 , C_3 , C_4 , C_5 , and C_6 straight and branched alkoxy, $-R^5$, -NHR⁶, -OR⁷ and -O⁻X⁺; and

 R^3 is chosen from hydrogen, $-(C=O)R^4$, $-(C=O)R^5$, $-(C=O)NHR^6$ and $-(C=O)OR^7$.

- (original) A compound according to claim 3 wherein at least one of 9. R^1 , R^2 and R^3 is -G-O(C=O) R^4 or -(C=O)-G-O(C=O) R^4 ; and G is chosen from -OCH₂- and -OCH(CH₃)-.
- (currently amended) A compound according to any of claims 3-9 claim 3 wherein R⁵ is 10.

Serial No.: 10/587,054

Page 10 of 24

11. (currently amended) A compound according to any of claims 3-9 claim 3 wherein R⁵ is

12. (original) A compound of formula II according to claim 3:

$$R^1$$
 O
 H_3C
 CH_3
 II

wherein

R¹ is chosen from hydroxy, R⁵ and -O⁻ X;

 R^2 is chosen from -G-O(C=O) R^4 , -NH R^6 and OR 7 .

13. (original) A compound of formula II according to claim 3:

$$R^1$$
 O
 H_3C
 CH_3
 II

wherein

 R^1 is chosen from -G-O(C=O) R^4 , -NHR⁶ and OR⁷; and

 R^2 is chosen from hydroxy, R^5 and $-O^-X$.

Serial No.: 10/587,054 Page 11 of 24

1 450 11 01 2 .

14. (original) A compound according to claim 3 of formula

wherein

 R^1 and R^2 are chosen from hydroxy, C_1 , C_2 , C_3 , C_4 , C_5 , and C_6 straight and branched alkoxy and $-O^-X^+$.

15. (original) A compound according to claim 3 of formula:

Atty. Dkt. No.: 2221.008B

Applicant: Pearson et al. Serial No.: 10/587,054

Page 12 of 24

16. (original) A compound according to claim 3 of formula:

wherein

R¹ is chosen from -G-O(C=O)R⁴, -NHR⁶ and OR⁷; and

 R^2 is chosen from hydroxy, C_1 , C_2 , C_3 , C_4 , C_5 , and C_6 straight and branched alkoxy, R^5 and $-O^-$ X.

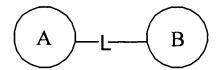
17. (original) A compound according to claim 3 wherein R⁷ is

- 18. (currently amended) A pharmaceutical composition comprising a pharmaceutically acceptable carrier and a compound according to any of claims 1–9 and 12–17 claim 1.
- 19. (original) An aerosol pharmaceutical composition according to claim 18.
- 20. (original) An oral pharmaceutical composition according to claim 18.
- 21. (original) An oral pharmaceutical composition according to claim 20 in the form of a tablet, capsule or syrup.

Applicant: Pearson et al. Atty. Dkt. No.: 2221.008B Serial No.: 10/587,054

Serial No.: Page 13 of 24

22. (original) A method for treating a pulmonary disorder comprising administering a compound represented by the structure:



wherein

A is a mast-cell stabilizer;

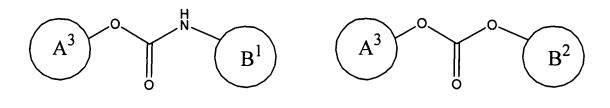
L is a covalent linkage;

B is an iNOS inhibitor.

23. (original) A method according to claim 22 for treating a pulmonary disorder wherein L is chosen from -CONH-, -COO-, -O(C=O)O-, -O(C=O)NH-, -NHCONH- and -(C=O)OCH(R)O(C=O)- and the compound is represented by a structure chosen from:

Serial No.:

Page 14 of 24



$$A^3$$
 B^3

and

wherein

A¹ is a mast-cell stabilizer having a carboxylic acid substituent;

A² is a mast-cell stabilizer having an amine substituent;

A³ is a mast-cell stabilizer having an alcohol substituent;

B¹ is an iNOS inhibitor having an amine substituent;

B² is an iNOS inhibitor having an alcohol substituent;

B³ is an iNOS inhibitor having a carboxylic acid substituent; and R is hydrogen or methyl.

- 24. (currently amended) A method for treating a pulmonary disorder comprising administering a compound according to any of claims 3-9 and 12-17 claim 3.
- 25. (original) A method according to claim 24 for treating bronchospasm.
- 26. (original) A method according to claim 24 for inducing bronchodilation.
- (original) A method according to claim 24 for treating chronic obstructive pulmonary 27. disease.
- 28. (original) A method according to claim 24 for treating asthma.

Serial No.:

Page 15 of 24

29. (original) A method according to claim 24 for treating rhinitis.

- 30. (original) A method according to claim 24 wherein the pulmonary disorder is acute pulmonary vasoconstriction, pneumonia, traumatic injury, aspiration or inhalation injury, fat embolism in the lung, acidosis, inflammation of the lung, adult respiratory distress syndrome, acute pulmonary edema, acute mountain sickness, post cardiac surgery, acute pulmonary hypertension, persistent pulmonary hypertension of the newborn, perinatal aspiration syndrome, hyaline membrane disease, acute pulmonary thromboembolism, heparin-protamine reactions, sepsis, hypoxia, chronic pulmonary hypertension, bronchopulmonary dysplasia, chronic pulmonary thromboembolism, idiopathic pulmonary hypertension, primary pulmonary hypertension or chronic hypoxia.
- (original) A method for treating a pulmonary disorder comprising co-administering a 31. mast-cell stabilizer and an iNOS inhibitor in the form of a salt, in which one of said mast-cell stabilizer and said iNOS inhibitor is a cation or dication, and the other of said mast-cell stabilizer and said iNOS inhibitor is an anion or dianion.
- (original) A method according to claim 31 wherein said cation is chosen from: 32.

$$H_3C$$
 H_3C
 S
 CO_2H

$$H_3C$$
 NH_2
 NH_2

Applicant: Pearson et al.

Serial No.:

10/587,054

Page 16 of 24

 $\dot{N}H_2$ $\dot{N}H_2$ -NH₃ ⊕ ĊH₃ ЮH CO₂H

Atty. Dkt. No.: 2221.008B

NH₂

Atty. Dkt. No.: 2221.008B Applicant: Pearson et al. Serial No.: 10/587,054

Page 17 of 24

Serial No.: 1

.: 10/587,054

Page 18 of 24

and their corresponding dications;

and said anion is chosen from:

and their corresponding dianions.

33. (original) A salt comprising a mast-cell stabilizer and an iNOS inhibitor wherein one of

Serial No.: 10/587,054

Page 19 of 24

said mast-cell stabilizer and said iNOS inhibitor is a cation or dication, and the other of said mast-cell stabilizer and said iNOS inhibitor is an anion or dianion.

34. (original) A salt according to claim 33 wherein said cation is chosen from:

$$H_{3}C$$
 $H_{3}C$
 $H_{4}C$
 H

Serial No.: Page 20 of 24

Applicant: Pearson et al. Atty. Dkt. No.: 2221.008B Serial No.: 10/587,054

Serial No.: Page 21 of 24

$$CH_3$$
 NH_2
 NH_2
 NH_2
 NH_2
 NH_2

and

$$\begin{array}{c|c}
N & H \\
N & NH \\
N & O \\
\end{array} \begin{array}{c}
N & H \\
N & CH_3 \\
H_2N \oplus
\end{array}$$

and their corresponding dications;

and said anion is chosen from:

Applicant: Pearson et al.

Atty. Dkt. No.: 2221.008B

Serial No.: 10/587,054

Page 22 of 24

HO H₃C

and their corresponding dianions.

35. (original) A compound of formula I or II

$$R^1$$
 O
 H_3C
 CH_3
 II

wherein

 R^1 and R^2 are chosen from hydroxy, C_1 , C_2 , C_3 , C_4 , C_5 , and C_6 straight and branched alkoxy, -G-O(C=O) R^4 , R^5 , -NH R^6 , -OR 7 and -O $^-$ X $^+$, wherein X $^+$ is a pharmaceutically acceptable cation;

 R^3 is chosen from hydrogen, -(C=O) R^4 , -(C=O)-G-O(C=O) R^4 , -(C=O) R^5 , -(C=O)NH R^6 and

Serial No.: 10/587,054

Page 23 of 24

 $-(C=O)OR^{7};$

-O(C=O)R⁴ is the deshydrogen residue of a carboxylic acid, the parent of which, R⁴COOH, is a chemical means for inhibiting inducible nitric oxide synthase (iNOS);

-(C=O)R⁴ is the deshydroxy residue of a carboxylic acid, the parent of which, R⁴COOH, is a chemical means for inhibiting iNOS;

 R^5 is -O- R^{20} -U, wherein U is chosen from hydrogen, (1,2-dithiolan-3-yl) and phenyl, and R^{20} is a divalent C_1 to C_{20} alkane or oxaalkane residue;

-NHR⁶ is the deshydrogen residue of an amine, the parent of which, R⁶NH₂, is a chemical means for inhibiting iNOS;

-OR⁷ is the deshydrogen residue of an alcohol, the parent of which, R⁷OH, is a chemical means for inhibiting iNOS;

G is a linking moiety cleavable under physiologic conditions; and at least one of R^1 , R^2 and R^3 must be -G-O(C=O) R^4 , -NHR⁶, -OR⁷, -(C=O) R^4 , -(C=O)-G-O(C=O) R^4 , -(C=O)NHR⁶ or -(C=O)OR⁷.